JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION (JOFOC)
(In accordance with Federal Acquisition Regulation (FAR) 6.3 – Other than Full and Open Competition)

1. **This document is a justification for other than full and open competition prepared by NASA's Goddard Space Flight Center (NASA's GSFC).**

2. **The nature and/or description of the action being approved:**
NASA's GSFC proposes to award a cost reimbursement indefinite-delivery indefinite-quantity (IDIQ) contract with The Aerospace Corporation (Aerospace), a Federally Funded Research and Development Center (FFRDC), for services in support of Center-wide activities to support programmatic, scientific, and engineering activities for both in-house and out-of-house programs and projects. This contract will be used to obtain services from Aerospace only until the award of NASA Agency-wide contract described below under paragraph 9 which is anticipated to be awarded by the end of 2009. This "bridge" contract shall have an 18-month ordering period to allow time for the follow-on award and provide some flexibility in case of unexpected delays in the award.

3. **Description of the supplies or services required, including an estimated value:**

The following are examples of the type of work Aerospace may be tasked to perform under this contract: support project development efforts, as well as ongoing projects, with independent technical expertise; provide technical experts to serve on independent review boards or to perform evaluations on technical and programmatic information that may contain proprietary contractor information; perform system level reliability and cost and performance analysis using analytical tools and databases that are unique to Aerospace; support NASA's GSFC in-plant monitoring of contractors fabricating space flight hardware or delivering services to NASA's GSFC; perform analysis such as studies at Aerospace's Concept Design Center to model performance and depict preliminary designs of communication satellites, geosynchronous satellites, ground stations, and ground systems; model customer use and loading for the Tracking and Data Relay Satellite (TDRS) network of satellites as well as perform reliability studies of this network; and utilize the Aerospace Space Systems Engineering Database (SSED) for developing system engineering tools for space flight missions using the complexity model developed at Aerospace.

Aerospace may be tasked to support activities for projects that are in pre-formulation, formulation, design, integration and test, and operations phases. These tasks will include the use of unique expertise and facilities that Aerospace possesses, including the areas of radiation hardness and space environmental effects, independent technical evaluation, cost modeling, in-depth reliability modeling, performance analysis, modeling user loading for the TDRS communications network of satellites, complexity modeling utilizing the Aerospace SSED, trend analyses of space mission data in that SSED, and use of the Satellite Orbit Analysis Program (SOAP).

The following unique Aerospace Corporation facilities may be used to perform tasks:

a. Concept Design Center or Integrated Satellite Design Center,

b. Space Sciences Laboratory (SSL) (radiation testing),

c. Real-time Simulation Center,

d. Center for Orbit Debris and Re-entry studies,

e. Real-time X-ray Facility, and

f. Battery Test Facility

NASA's GSFC will also write tasks to

The estimated value of this contract is $35 million for the 18-month ordering period.

4. Statutory authority permitting other than full and open competition:

The statutory authority permitting other than full and open competition is 10 U.S.C. 2304(c)(1)—Only one responsible source.

5. A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited:

NASA's GSFC is committed to specific and critical milestones regarding the delivery and/or processing of complex systems that include developing, integrating, testing, and operating spaceflight hardware and communications networks. Aerospace has unique laboratories and facilities to assess radiation environments and radiation effects on parts and spacecraft performance.

Aerospace's unique facility, SSL, has state-of-the-art capability to calibrate the radiation effects on parts and instrumentation and to assess the reliability of complex devices such as firmware (e. g., ACTEL, FPGA) in a radiation environment. This laboratory can simulate single-event upsets and has a separate laboratory that can characterize radiation effects on thin films and polymers. Aerospace also has unique analytical capabilities to model radiation environments such as spacecraft charging and to model the performance of electronics in a radiation environment.

Aerospace has other unique laboratories and facilities that would enhance the reliability and performance of NASA GSFC's space flight programs. Its Real-time X-ray Facility enables real time microscopic x-ray imaging of hardware and components to reveal hidden defects. In this facility the components inside a flight box can be examined while leaving the flight box itself unopened and intact. Its Battery Test Facility can evaluate battery electrochemistry to complex failure analysis on battery performance. Its Real-Time Simulation Center can perform real-time, hardware-in-the-loop flight software simulations. The Center for Orbit Debris and Reentry Studies is an Aerospace facility dedicated to understanding and predicting the risks of orbital and reentry debris.

Aerospace has developed an interactive 3-dimensional orbit visualization and analysis program, SOAP. This program can simulate thousands of satellites, ground stations, aircraft, ships, and planets simultaneously in flight and emulate the potential interaction of these entities. This unique capability is clearly a value to NASA's GSFC efforts to support the Constellation Program with a state-of-the art communication network. There is also a benefit

to the communications infrastructure, that NASA's GSFC is responsible for, which supports the interaction of many users. For years, Aerospace has been using this SOAP to perform continual modeling of the customer and user loading on the TDRS network of satellites.

Aerospace also has developed an analytical capability in its Generalized Availability Program to model procurement uncertainties in satellite parts and supplies as well as launch reliability inputs. This capability, not available anywhere else, would be invaluable for project planning purposes.

For over 46 years, Aerospace has collected data on civilian and military space missions: its SSED is a unique and unparalleled resource allowing for in-depth analysis of cost, reliability, and performance of space flight missions. Aerospace has developed cost and reliability analytical tools that use this SSED. The models integrate schedule and cost at all phases of a project and perform complex algorithms on the SSED. These programs have great credibility throughout the aerospace community, within both the civilian and defense federal agencies as well as academic and commercial organizations. It would benefit NASA's GSFC projects to have access to these tools for project planning. This information would provide a check on our in-house reliability and cost estimates and enhance the credibility of our estimates.

Aerospace has state-of-the-art analytical tools that would enhance NASA GSFC's core capabilities and the reliability of Goddard's flight projects. Aerospace has developed unique analytical tools to mine its extensive and unique SSED. This database contains all space vehicle anomalies and lessons learned throughout the history of space flight as well as the pedigree of all U.S Government and commercial on-orbit spaceflight hardware. This database is the only one of its kind and the tools that Aerospace has developed to interpret the data in this database can reveal information not available anywhere else.

Aerospace has a proven track record of successfully integrating and protecting proprietary information on multi-contractor projects. All contracts issued by the Air Force's Missiles Systems Program Offices, for which Aerospace provides systems engineering, integration , and or independent peer reviews, contain the "Aerospace Enabling Clause." This clause requires contractors to provide Aerospace with all information necessary to complete its task. This clause also assures contractors that their proprietary information will be safeguarded by Aerospace. As a result all major U.S. space related industrial organizations have become comfortable working with Aerospace.

6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable, including whether a notice was or will be publicized as required by FAR 5.202:

Notice of this intent to award a noncompetitive contract to Aerospace was advertised in Federal Business Opportunities on August 29, 2008. No responses were received to that notice.

7. **A determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable:**

The estimated cost will be determined to be fair and reasonable based upon a comparison with the exiting Aerospace contract with the United States Air Force, as well as with many previous efforts performed by Aerospace for NASA. Comparison with the cost of comparable engineering skills under other contracts and knowledge of salaries paid to engineering personnel in the aerospace community is available. Before the contract is awarded, reasonableness of the cost will be further verified by analysis of certified cost and pricing data to be furnished by Aerospace under the Truth-in-Negotiation Act and by analysis by the cognizant Defense Contract Audit Agency of the direct and indirect costs rates proposed by Aerospace. After contract award, work will be authorized on individual IDIQ tasks. Cost proposals for tasks will be reviewed by the Contracting Officer Technical Representative and negotiated by the Contracting Officer for fair and reasonable costs.

8. **Description of the market research conducted, and the results, or a statement of the reasons market research was not conducted:**

A market survey was not conducted because of the necessity of using an FFRDC with Aerospace's unique capabilities and facilities, described above, to attain the requisite independent and in-depth assessments of NASA's GSFC flight projects. Based on our technical experts who have extensive knowledge of this industry, it has been determined that Aerospace is the only known entity that possesses the unique capabilities necessary to fulfill this requirement. Additionally, there were no responses to the Government synopsis issued for this requirement.

9. **Other facts supporting the use of other than full and open competition:**

This acquisition will only bridge the time needed for the Agency to complete its acquisition planning and award activities for a NASA Agency-wide contract with Aerospace, which will replace this noncompetitive contract. The anticipated award of the Agency-wide contract is expected by the end of 2009.

10. **Sources, if any, that expressed an interest, in writing, in the acquisition:**

A synopsis was posted for a total of 15 days to solicit input from industry. No responses were received.

11. **The actions the Agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:**

A subsequent acquisition will be conducted by NASA to award an Agency-wide contract to Aerospace on a noncompetitive basis which is anticipated to be awarded by the end of 2009. Accordingly, there are no actions that can be taken to overcome any barriers to competition give the unique capabilities and facilities of Aerospace.

JOFOC Signature Page for Specialized Programmatic, Engineering, Evaluation, and Test Services

TECHNICAL OFFICER: I certify that the supporting data presented in this justification are accurate and complete.

Signature _____ Date 2/12/09

CONTRACTING OFFICER: I certify that this justification is accurate and complete to the best of my knowledge and belief.

Signature _____ Date 2/12/09

for PROCUREMENT OFFICER: (CONCURRENCE)

Signature _____ Date 3/5/09

GSFC COMPETITION ADVOCATE: (APPROVAL)

Signature _____ Date 3/5/09

GSFC CENTER DIRECTOR: (APPROVAL)

Signature _____ Date 3/9/09